

REMARKS

In the Office Action mailed March 30, 2004 the Examiner noted that claims 1-8 were pending, and rejected claims 1-8. Claims 1 and 4-7 have been amended, and claim 3 has been canceled and new claims 9-11 have been added, and, thus, in view of the forgoing claims 1-11 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections are traversed below.

In the Action the Examiner objected to the drawings and requested proposed drawing corrections. Approval of proposed drawing corrections are requested in a concurrently filed Letter to the Examiner.

In the Action the Examiner objected to the claims and made a suggestion for correction. The claims have been amended in consideration of the Examiner suggestion and withdrawal of the objection is requested. However, if additional concerns arise the Examiner is invited to contact the undersigned by telephone to discuss same.

In the Office Action the Examiner rejected claims 1-8 under 35 U.S.C. section 112 paragraph 2 as indefinite particularly expressing concerns with claims 1, 3 and 5. The claims have been amended in consideration of the Examiner's comments and it is submitted they satisfy the requirements of the statute. If additional concerns with the claims arise, the Examiner is invited to telephone to resolve the same. Suggestions by the Examiner are also welcome. Withdrawal of the rejection is requested.

On page 6 the Examiner indicated that claim 7 was allowable subject to overcoming the 112 rejection. It is submitted that claim 7 is allowable.

On pages 5 and 6 of the Office Action, the Examiner rejected claim 1-6 and 8 under 35 U.S.C. § 102 as anticipated by Hilton or as anticipated by Osone.

In Osone a tag search progresses using an address resulting from a translation by a dynamic address translator (DAT) while waiting for receipt of a requested key and when a tag-miss occurs a pre-fetch is issued to main memory. When a tag-hit occurs, a data access request is issued for a second time after the received key is registered and the translated address is stored in the translation lookaside buffer (TLB). The same operations are performed even when a key check is not required. The address used for the tag search is from the DAT rather than from the TLB.

In Hilton a cache tag search is progressed using an address found by searching the TLB after the address is registered based on a translation by the DAT and a move-in request is

issued to the main memory for a tag-miss. When a tag-hit occurs in Ozone, a data access request is issued in Hilton for a second time after the received key is registered and the translated address is stored in the translation lookaside buffer (TLB). The same operations are performed even when a key check is not required.

In both Hilton and Ozone a cache tag is searched while waiting for the key and a data request is issued to main memory for a tag-miss. In both Hilton and Ozone, when a tag-hit occurs a tag search occurs only after the arrival of the key.

In the present invention, the data is retrieved (and transmitted to an instruction processor) while waiting for the requested key. Additionally, the TLB is released after the registration for a TLB-miss and becomes available for a succeeding access while waiting to receive the requested key. The TLB is available for a succeeding access while still waiting for the key of the preceding access. Hilton and Ozone do not teach or suggest anything about "enabling a search of the translation lookaside buffer device for a successive data access without waiting for the requested storage key to be received"

It is submitted that the present claimed invention patentably distinguishes over * and withdrawal of the rejection is requested.

The dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art. For example, claim 2 calls for sending data to an instruction processor without performing a key check for an access requiring a key check. Claim 5 emphasizes the issuing of a plurality of key requests for an apparatus with a plurality of key ports. The prior art does not teach or suggest these features. It is submitted that the dependent claims are independently patentable over the prior art.

New claims 9-11 emphasize the transmission of the data to the processor without awaiting the key. Nothing in the prior art teaches or suggests such. It is submitted that these new claims distinguish over the prior art.

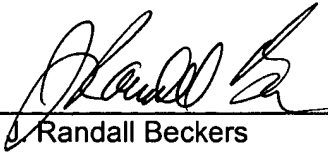
It is submitted that the claims satisfy the requirements of 35 U.S.C. section 112. It is also submitted that claim 7 continues to be allowable. It is further submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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Date: 7/29/14

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